



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
P0039616	MCM001-VU	1	1	2% 10 Net 30	MT-NYLON 6- R3.750-W	Nylon 6 White Round Bar 3.750" Dia.				2	4/18/2018	2		S062427	Stock	4/18/2018	\$ 72.09 / ft	0		\$144.18	McMaster- Carr Supply Co,
		2			MBRONZR1.000	Bronze Round Bar 1.000" MATERIAL: OIL IMPREGNATED SINTERED BRONZE ROUND BAR AS PER SAE 841 TYPE 1, CLASS A OR AMS 4805 OR ASTM B438 GRADE 1, TYPE 2 OR MIL-B-5687D TYPE 1, GRADE 1 receive ft				1		1		S062428	Stock	4/18/2018	\$ 60.19 / ft	0		\$65.00	McMaster- Carr Supply Co,
										Total:		3								\$209.18	

Plex 4/18/2018 11:56 AM dart.Tollis.Andrew



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039616**

Supplier: MCM001-VU
McMaster-Carr Supply Co,
P.O. Box 7690
Chicago, IL 60680-7690 USA
Phone: 330 995 5500
Fax: 330 995 9600

PO No: PO039616

PO Date: 4/16/18

Due Date: 4/18/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Via: Ground

Pymt Terms: 2% 10 Net 30

Freight Terms:

Special Comments:

E-MAILED
APR 16 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	MT-NYLON 6-R3.750-W	8538K68	Nylon 6 White Round Bar 3.750" Dia.	Firmed	4/18/18	2 ft	0 ft	2 ft	\$72.09/ft	\$144.18
2	MBRONZR1.000	8932K45 6.5" long	Bronze Round Bar 1.000" : MATERIAL: OIL IMPREGNATED SINTERED BRONZE ROUND BAR AS PER SAE 841 TYPE 1, CLASS A OR AMS 4805 OR ASTM B438 GRADE 1, TYPE 2 OR MIL-B-5687D TYPE 1, GRADE 1 receive ft	Firmed	4/18/18	1.08 ft	0 ft	1 ft	\$60.185185/ft	\$65.00
Grand Total:										\$209.18

Order Notes

Procurement Quality Clauses
A005 RIGHT OF ENTRY
A016 PERSONNEL QUALIFICATION
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT
A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS
A040 NOTIFICATION OF QUALITY ESCAPE
A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM
A049 SUPPLIER AWARENESS

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 4/16/18 2:03 PM dart.lavoie.chantal



200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
P0039616

Page 1 of 1

Order Placed By
Chantal Lavoie

04/16/2018

McMaster-Carr Number
2224014-01

Line	Product	Ordered	Shipped
1	8538K68 Off-White Nylon Rod, 3-3/4" Diameter, 2' Length	2 Feet	2
2	8932K45 Oil-Filled 841 Bearing Bronze Rod, 1" Diameter, 6-1/2" Long	2 Each	2

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MBronz R1.000
 DATE: APR 18 2018

PO / BATCH NO.: 039616/5062428

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 1
 QUANTITY INSPECTED: 1
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000
 THICKNESS RECEIVED: 1.000
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORROSION	Y <input type="radio"/> N <input checked="" type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	<u>Astm B438</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input type="radio"/> N <input checked="" type="radio"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	<u>PO# 039616 Part # 8932K45</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input type="radio"/> N <input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input type="radio"/> N <input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>APR 18 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

- Specifications Met: ASTM B433

Powdered bronze is pressed and then impregnated with SAE 30 oil to make this material self-lubricating. Use it to make bearings and parts for hard-to-reach areas that would be difficult to get well pumps and turbine blades.

OD	Tolerance Rating	ID	3" Lg.	6 1/2" Lg.
3/16" Wall Thick.				
1"	Oversized	5/8"	\$931K111	\$17.27 \$26.57
1/4" Wall Thick.				
1"	Oversized	1/2"	\$931K121	18.27 28.11
1 1/8"	Oversized	3/8"	\$931K131	22.57 34.73
1 1/4"	Oversized	3/4"	\$931K141	24.27 37.34
1 3/8"	Oversized	7/8"	\$931K151	28.14 43.29
1 1/2"	Oversized	1"	\$931K161	30.66 47.17
1 3/4"	Oversized	1 1/8"	\$931K171	31.26 48.09
2"	Oversized	1 1/2"	\$931K181	36.08 55.51
2 1/4"	Oversized	1 3/4"	\$931K191	41.83 64.35
5/16" Wall Thick.				
1 1/8"	Oversized	1/2"	\$931K201	24.02 36.96
1 1/4"	Oversized	5/8"	\$931K211	25.08 38.58
1 1/2"	Oversized	3/4"	\$931K221	32.23 49.59
1 5/8"	Oversized	1"	\$931K231	34.11 52.47
3/8" Wall Thick.				
1 1/4"	Oversized	1/2"	\$931K241	25.81 39.70
1 3/8"	Oversized	5/8"	\$931K251	33.56 51.63
1 1/2"	Oversized	3/4"	\$931K261	32.28 49.66
1 3/4"	Oversized	1"	\$931K271	38.42 59.11
2"	Oversized	1 1/8"	\$931K281	42.00 64.62
2 1/4"	Oversized	1 1/2"	\$931K291	50.56 77.78
2 1/2"	Oversized	1 3/4"	\$931K301	53.57 82.42
2 3/4"	Oversized	2"	\$931K311	58.79 90.44
3"	Oversized	2 1/8"	\$931K321	68.12 104.80
3 1/4"	Oversized	3"	\$931K331	82.73 127.27

OD	Tolerance Rating	ID	3" Lg.	6 1/2" Lg.
7/16" Wall Thick.				
1 1/2"	Oversized	5/8"	\$931K341	\$34.35 \$52.84
1/2" Wall Thick.				
1 1/2"	Oversized	1/2"	\$931K351	37.06 57.02
1 3/4"	Oversized	3/4"	\$931K361	43.90 67.54
2"	Oversized	1"	\$931K371	48.93 75.28
2 1/4"	Oversized	1 1/8"	\$931K381	58.86 90.55
2 1/2"	Oversized	1 1/2"	\$931K391	61.91 95.25
2 3/4"	Oversized	1 3/4"	\$931K401	68.61 105.55
3"	Oversized	2"	\$931K411	78.49 120.76
3 1/4"	Oversized	2 1/4"	\$931K421	87.10 134.00
3 1/2"	Oversized	2 1/2"	\$931K431	92.86 142.86
4"	Oversized	3"	\$931K441	102.80 158.15
5/8" Wall Thick.				
2"	Oversized	5/8"	\$931K451	53.95 83.00
2 1/2"	Oversized	1 1/4"	\$931K461	69.39 106.75
3"	Oversized	1 3/4"	\$931K471	84.51 130.02
3 1/4"	Oversized	2 1/2"	\$931K481	116.76 179.63
11/16" Wall Thick.				
2"	Oversized	5/8"	\$931K491	56.20 86.46

OD	Tolerance Rating	ID	3" Lg.	6 1/2" Lg.
3/4" Wall Thick.				
3"	Oversized	1 1/2"	\$931K501	\$60.68 \$93.36
2 1/2"	Oversized	1"	\$931K511	80.28 123.50
3"	Oversized	1 1/2"	\$931K521	92.44 142.21
4"	Oversized	2 1/2"	\$931K531	136.51 210.02
7/8" Wall Thick.				
3"	Oversized	1 1/4"	\$931K541	97.87 150.57
3 1/2"	Oversized	1 3/4"	\$931K551	133.25 205.00
1" Wall Thick.				
3"	Oversized	1"	\$931K561	104.20 160.31
4"	Oversized	2"	\$931K571	156.57 240.87
4 1/2"	Oversized	2 1/2"	\$931K581	190.41 292.94
5"	Oversized	3"	\$931K591	207.77 319.64
6"	Oversized	4"	\$931K601	256.87 395.18
7"	Oversized	5"	\$931K611	306.15 471.00
1 1/2" Wall Thick.				
6"	Oversized	3"	\$931K621	327.13 503.27

Oil-Filled 841 Bearing Bronze Rods



- Yield Strength: 11,000 psi
- Hardness: Not Rated
- Temper: Not Rated
- Heat Treatable: No
- Specifications Met: ASTM B433

Powdered bronze is pressed and then impregnated with SAE 30 oil to make this material self-lubricating. Use it to make bearings and parts for hard-to-reach areas that would be difficult to access for lubrication, such as well pumps and turbine blades.

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: OIL IMPREGNATED SINTERED BRONZE ROUND BAR

SPECIFICATION: SAE 841 TYPE 1, CLASS A OR
AMS 4405 OR
MIL-B-5687D TYPE 1, GRADE 1

PART NUMBER: MBRONZR0.DDD
DIA

WHERE "D.DDD" = DIAMETER IN INCHES
EG. 5/8 ROUND BAR = MBRONZR0.625

RELEASED
2011-07-19

A	NEW ISSUE	DESCRIPTION	BY	DATE
REV.				
DESIGN		DART AEROSPACE LTD		
DRAWN		HAWKESBURY, ONTARIO, CANADA		
CHECKED		DRAWING NO.		
MFG. APPR.		MBRONZR		
APPROVED		TITLE		
DE APPR.		BRONZE ROUND BAR		
DATE	10.10.25	SCALE		
		NTS		

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NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON OR ENTITY
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-Nylon6-R3.750

PO / BATCH NO. 039616/5062427

DATE: APR 18 2018

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 2
 QUANTITY INSPECTED: 2
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 3.750
 THICKNESS RECEIVED: 3.750
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORROSION	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	As per 05989
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	Ref # 39616 Ref # 8538168
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____		
DATE: <u>9-89</u> <u>APR 18 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

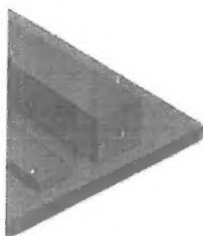
WHERE "D.DDD" = DIAMETER IN INCHES
WHERE C = COLOR [W= WHITE] / [B= BLACK]
EG. 5/8" ROUND BAR = MT-NYLON 6-R0.625-W

ENC 17-649

Nylon

For comparative information about plastics, see page 36#2.

Nylon Sheets, Bars, and Strips



With excellent wear and abrasion resistance, these nylon 6/6 sheets, bars, and strips are often used for bearings, gears, and other high-wear parts. They resist gasoline, mineral oil, RWS/eth.

Sheets

- Color: Off-White or Black
- Temperature Range: -40° to 185° F
- Tensile Strength: 11,200 psi (Excellent)
- Impact Strength: 1.0 ft.-lbs./in. (Good)
- For Use Outdoors: No
- Specifications Met:
 - Off-White:
 - Less than 1/8" Thick: ASTM D5889, ASTM D6779, Made of FDA Listed Material, NSF/ANSI Standard 61 for Drinking Water, UL 94HB
 - 1/8" Thick, and larger: ASTM D5889, ASTM D6779, Made of FDA Listed Material, NSF/ANSI Standard 61 for Drinking Water, UL 94V2
 - Black: ASTM D5889, ASTM D6779

		Off-White		Black	
Wd.	Lg.	Each		Each	
1/32" Thick. (-0.003" to +0.003" Tolerance)					
6"	6"	8539K851	\$1.74	8540K311	\$2.24
12"	12"	8539K23	3.66	8540K121	4.24
12"	24"	8539K29	6.66	8540K221	7.73
12"	48"	8539K696	12.71	8540K721	14.71
24"	24"	8539K891	12.71	8540K421	14.71
24"	48"	8539K491	21.54	8540K621	24.94
3/64" Thick. (0" to +0.006" Tolerance)					
6"	6"	8539K893	2.90	8540K313	3.37
12"	12"	8539K232	6.08	8540K123	7.07
12"	24"	8539K292	11.09	8540K223	12.90
12"	48"	8539K698	21.10	8540K722	24.55
24"	24"	8539K893	21.10	8540K423	24.55
24"	48"	8539K493	35.76	8540K623	41.61
1/16" Thick. (-0.005" to +0.005" Tolerance)					
6"	6"	8539K884	3.24	8540K314	3.68
12"	12"	8539K11	6.80	8540K111	7.58
12"	24"	8539K31	12.58	8540K211	14.68
12"	48"	8539K71	23.63	8540K711	25.80
24"	24"	8539K91	23.63	8540K411	25.97
24"	48"	8539K51	40.00	8540K611	45.49
5/64" Thick. (-0.009" to +0.009" Tolerance)					
6"	6"	8539K885	4.03	8540K315	5.34
12"	12"	8539K233	9.65	8540K124	11.20
12"	24"	8539K311	17.59	8540K224	20.43
12"	48"	8539K711	31.77	8540K724	36.90
24"	24"	8539K911	31.77	8540K424	36.90
24"	48"	8539K511	56.74	8540K624	65.89
3/32" Thick. (-0.007" to +0.007" Tolerance)					
6"	6"	8539K886	4.09	8540K316	4.65
12"	12"	8539K12	10.96	8540K112	13.04
12"	24"	8539K32	20.23	8540K212	23.81
12"	48"	8539K72	36.49	8540K712	40.60
24"	24"	8539K92	36.49	8540K412	40.60
24"	48"	8539K52	64.96	8540K612	73.80
7/64" Thick. (-0.016" to +0" Tolerance)					
6"	6"	8539K887	4.38	8540K317	5.10
12"	12"	8539K234	11.82	8540K125	13.75
12"	24"	8539K321	21.54	8540K225	25.07
12"	48"	8539K721	38.92	8540K725	45.29
24"	24"	8539K921	38.92	8540K425	45.29
24"	48"	8539K521	69.60	8540K625	80.68